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In the Claims

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1    1. (Currently amended)      A method of communicating over a plurality of different  
2    target media each having a protocol, comprising:

3                 providing, for each of the plurality of different target media, a plurality of  
4    communication element types hierarchically representing different communication  
5    elements for the respective protocol,

6                 each communication element type being a user-definable data structure that  
7    pertains to a particular protocol-layer of the respective target medium protocol,

8                 wherein at least some communication element types relating to higher layers of  
9    the protocol include references to one or more communication element types relating to  
10   lower layers of the protocol, and

11                 wherein the plurality of communication element types are accessible to at least  
12   one software program for directing communications over the respective target medium

13                 wherein at least one of the plurality of communication element types is included  
14   by reference in greater than one other of the plurality of communication element types.

1    2. (Currently amended)      A method as recited in claim 1, wherein further comprising  
2    creating, by one of the software program(s), instances of each one or more  
3    communication element types can be created for exchanging data on the respective target  
4    medium.

1    3. (Currently amended)      A method as recited in claim 1, further comprising  
2    defining wherein the step of providing comprises defining one or more of the plurality of  
3    communication element types responsive to exchanges allowed by the protocol of the  
4    respective target medium.

1    4. (Currently amended)      A method as recited in claim 1, further comprising:

2                 creating, by one of the software program(s), an instance of at least one of the  
3    plurality of communication element types; and

4 | processing each said the-instance of the communication element type for  
5 | exchanging information on the respective target medium.

1 | 5. (Currently amended) A method as recited in claim 1, wherein at least one of the  
2 | plurality of communication element types defines a structure for transmitting data over  
3 | the target medium.

1 | 6. (Currently amended) A method as recited in claim 1, wherein at least one of the  
2 | plurality of communication element type defines a structure for receiving data over the  
3 | target medium.

1 | 7. (Original) A method as recited in claim 1, wherein at least one communication  
2 | element type is a message type that includes a portion for holding message data  
3 | associated with instances of the respective message type.

1 | 8. (Original) A method as recited in claim 7, wherein the message data has a fixed  
2 | length.

1 | 9. (Original) A method as recited in claim 7, wherein the message data has a variable  
2 | length.

1 | 10. (Currently amended) A method as recited in claim 1, wherein at least one of the  
2 | communication element types has a fixed portion that is the same for all instances of the  
3 | communication element type.

1 | 11. (Canceled)

1 | 12. (Original) A method as recited in claim 1, wherein the plurality of communication  
2 | element types includes at least one message type, and each instance of the message type  
3 | includes a portion for prescribing timing.

1   | 13. (Currently amended)   A method as recited in claim 12, wherein the timing  
2   | includes a setting for specifying a pre-message gap.

1   | 14. (Original) A method as recited in claim 12, wherein the timing includes a setting for  
2   | specifying a pre-word gap.

1   | 15. (Original) A method as recited in claim 12, wherein the timing includes a setting for  
2   | specifying a begin message timeout.

1   | 16. (Original) A method as recited in claim 12, wherein the timing includes a setting for  
2   | specifying a trailing gap.

1   | 17. (Currently amended)   A method of structuring communications over a  
2   | communication medium having a known protocol, comprising:

3   |    providing a plurality of at least one user-definable communication element types  
4   |    for representing communication elements at at least one different layers of a generalized  
5   |    communication model; the protocol, each communication element type having a user-  
6   |    definable structure that pertains to a corresponding layer of the protocol;

7   |    in a software program, creating an instance of the at least one of the plurality of  
8   |    user-definable communication element types; and

9   |    varying at least one characteristic of the instance in the software program; and  
10 |    operating the software program to direct communications over the  
11 |    communications medium according to the instance with the varied characteristic and to  
12 |    determine a susceptibility of equipment operatively connected to the target  
13 |    communication medium to the varied characteristic.

1   | 18. (Previously presented) A method as recited in claim 17, wherein the at least one  
2   | characteristic includes a timing characteristic.

1    19. (Currently amended)    A method of creating an interface with a communication  
2    medium having a protocol, comprising:

3                 creating a plurality of user-definable communication element types for  
4    representing communication elements at different layers of a generalized communication  
5    the protocol model, wherein at least one of the plurality of communication element types  
6    is included by reference in greater than one other of the plurality of communication  
7    element types;

8                 saving the plurality of at least one user-definable communication element types in  
9    a computer readable format that can be accessed for communicating over the medium;

10                accessing the saved communication element types by a software program;

11                and

12                instantiating, via the software program, one or more of the plurality of  
13    communication element types to create one or more specific instances of communications  
14    over the communication medium; and

15                operating the software program to run the one or more specific instances of  
16    communications over the communications medium.

1    20. (Previously presented)    A method as recited in claim 1,

2                 wherein the plurality of user-definable communication element types include  
3    message types, word types, and field types,

4                 wherein at least one message type includes a reference to at least one word type,  
5    and

6                 wherein at least one word type includes a reference to at least one field type.

1    21. (New)    A method as recited in claim 4, further comprising creating multiple  
2    instances of one of the plurality of communication element types.

1    22. (New)    A method as recited in claim 21, further comprising processing each of the  
2    multiple instances for exchanging information on the respective target medium.

1    23. (New)    A method as recited in claim 17, wherein the software program is a test  
2    program for testing equipment connected to the communication medium, the method  
3    further comprising creating multiple instances of one of the plurality of communication  
4    element types in the test program.

1    24. (New)    A method as recited in claim 23, further comprising, , varying  
2    characteristics of each of the multiple instances created in the test program in different  
3    ways.

1    25. (New)    A method of communicating over a target medium having a protocol,  
2    comprising:

3                 providing a plurality of communication element types for representing different  
4    communication elements of the protocol, each of the plurality of communication element  
5    types being a user-definable data structure that pertains to a particular layer of the  
6    protocol,

7                 arranging the plurality of communication element types hierarchically, with at  
8    least one communication element type relating to a higher layer of the protocol including  
9    a reference to at least one communication element type relating to a lower layer of the  
10   protocol,

11                accessing at least one of the plurality of communication element types by a  
12   software program; and

13                directing communications, responsive to the accessed communication element  
14   type(s), over the target medium using the software program.

15   26. (New)    A method of communicating over a target medium having a protocol,  
16   comprising:

17                providing a plurality of message types and word types for representing  
18   communications using the protocol, each of the plurality of message types and word types  
19   being a user-definable data structure;

20                arranging the plurality of message types and word types hierarchically, with at  
21   least one message type including a reference to at least one word type;

- 1           accessing at least one of the plurality of message types and word types by a
- 2   software program; and
- 3           directing communications, responsive to the accessed message type and/or word
- 4   type over the target medium using the software program.